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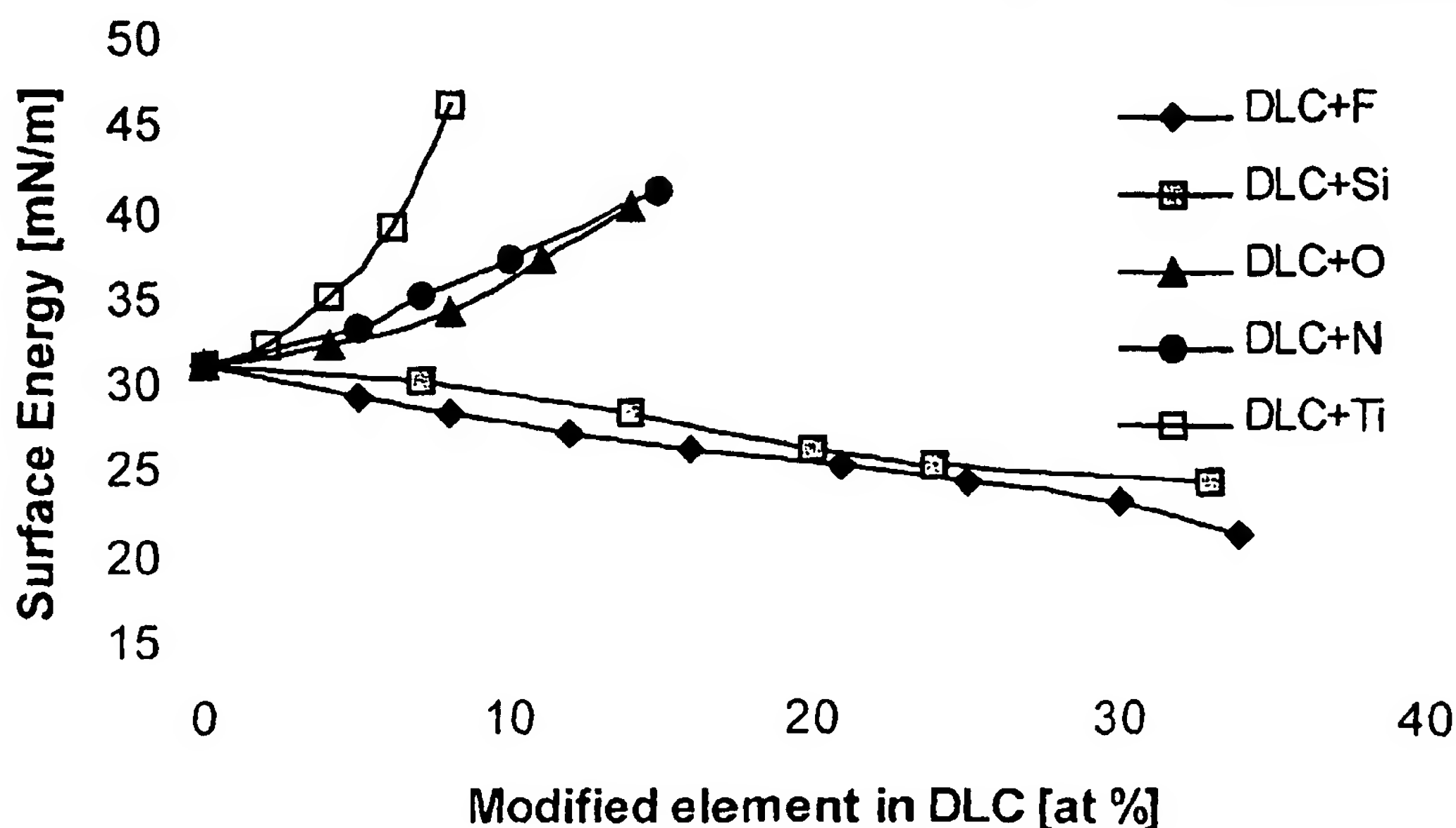
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(54) Title: COATINGS



(57) Abstract: This invention relates to coating a surface wherein the coated surface inhibits foulants such as cell and/or protein and/or prion adhesion or formation. In particular, the coated surface may be part of a medical device which inhibits bacterial adhesion and colonisation, thrombus formation and/or prion, blood protein and/or protein formation.



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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 03/03007

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 A61L33/00 A61L33/02 A61L27/30 A61L29/10 A61L31/08 C23C16/30		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 A61L C23C		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the International search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 287 473 A (FRANKS DR JOSEPH) 20 September 1995 (1995-09-20) page 1, paragraph 4 -page 5, paragraph 2 page 6, paragraph 4 -page 7, paragraph 2 page 8, paragraph 2 -page 9, paragraph 1 ---	7-12, 24-27
X	WO 00 75394 A (BEKAERT SA NV ;SERCU MARC (BE); NEERINCK DOMINIQUE (BE); EUFINGER) 14 December 2000 (2000-12-14) page 1, line 33 -page 9, line 6 page 10, line 25-31 --- -/--	7-12, 24-27
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *Z* document member of the same patent family		
Date of the actual completion of the international search 23 January 2004		Date of mailing of the international search report 09.02.04
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Maremonti, M

# INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	---	18,19
X	US 5 945 153 A (DEARNALEY GEOFFREY) 31 August 1999 (1999-08-31) column 1, line 39 -column 3, line 11; claims 1-11 ---	7-12, 24-27
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X	WO 01 43790 A (ST JUDE MEDICAL) 21 June 2001 (2001-06-21) page 3, line 2 -page 4, line 2 page 4, line 19 -page 5, line 31 page 7, line 7-15 page 9, line 11 -page 11, line 9 page 18, line 17 -page 20, line 3 ---	7-12, 24-27
A	GB 1 344 681 A (NORTON CO) 23 January 1974 (1974-01-23) page 1, line 35-45 page 2, line 16-26 page 2, line 64-101; examples ---	7,18,19, 24
X	EP 0 514 586 A (SUNNEN PRODUCTS CO) 25 November 1992 (1992-11-25) column 3, line 35 -column 5, line 43 column 7, line 44-58 column 9, line 48 -column 10, line 8 ---	7,20,21, 24
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International Application No  
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DATABASE WPI Section Ch, Week 199330 Derwent Publications Ltd., London, GB; Class A14, AN 1993-240281 XP002267922 &amp; JP 05 163582 A (SAMIKKUSU KK), 29 June 1993 (1993-06-29) abstract</p>	7,20-24
A	<p>DE 42 19 636 A (LSG LOET UND SCHWEISGERAETE GM) 23 December 1993 (1993-12-23) the whole document</p>	7,24
A	<p>WO 01 97718 A (COBB JUSTIN ;UNIV LONDON (GB); BLUNN GORDON (GB); GOODSHIP ALLEN ( ) 27 December 2001 (2001-12-27) page 1, paragraph 5 -page 2, paragraph 1 page 3, paragraphs 2,3 page 5, paragraph 4</p>	7,13-27

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 03/03007

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 1-6, 28-31  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1-6,28-31

The formulation of independent claim 1 includes an extremely large number of possible "modified surfaces". In fact, the feature "wherein the adhesion or attachment of particles...when the modified surface is in use" merely represents a desideratum, i.e. a result to be achieved, whereby the specific features which are necessary to achieve such result are not mentioned. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, if any, for only a very small proportion of the modified surfaces claimed.

Specifically, the only surface modification disclosed in the application in order to minimise or prevent the adhesion of particles is a coating of the surface with a modified diamond like carbon (DLC), Ag-PTFE-surfactant or Ni-Cu-P-PTFE. No indication of other possible surface modifications are disclosed in the application. The same reasoning applies to dependent claims 2-6, as well. For the same reason, independent claims 28 and 30 also include an extremely large number of possible methods. In fact, these claims merely comprise a desideratum, i.e. a result to be achieved (minimisation or prevention of the adhesion or attachment of particles to a surface), whereby the specific method features which are necessary to achieve such result are not mentioned.

The formulation of independent claims 29 and 31 includes an extremely large number of possible devices and device uses, respectively. It is completely obscure which kind of devices and uses should be intended since no specific features of such devices and uses are mentioned either in the claims or in the description.

Therefore, claims 1-6 and 28-31 so lack support, and the application so lacks disclosure, that a meaningful search of these claims is impossible (Articles 5 and 6 PCT). Consequently, the search has been carried out for those claims, which appear to be supported and disclosed, namely those claims relating to surfaces comprising the above mentioned coatings.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 7(partially),8-12,24-27(partially)

Surface modified with a coating of modified diamond-like carbon

2. Claims: 7(partially),13-19,24-27(partially)

Surface modified with a coating of Ag-PTFE-surfactant

3. Claims: 7(partially),20-23,24-27(partially)

Surface modified with a coating of Ni-Cu-P-PTFE



# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 03/03007

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Information on patent family members

International Application No

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